

Listing of Claims

1. (Currently Amended) A dormant control system in a packet data service network comprising:

a mobile station that provides information indicating whether the mobile station supports a dormant function using a specific message; and

a base station controller that receives the specific message after receipt of a mobile origination message from the mobile station and determines whether to conduct the dormant function based on service option information of the mobile station, a state of a dormant timer, and dormant control information included in the specific message received from the mobile station.

2. (Original) The dormant control system according to claim 1, wherein the specific message is a message used between the mobile station and the base station controller or a message that is provided between the mobile station and the base station controller.

3. (Original) The dormant control system according to claim 2, wherein said specific message indicates whether the mobile station supports the dormant function or not by using a field that is not used otherwise in said specific message.

4. (Original) The dormant control system according to claim 2, wherein the message that is used between the mobile station and the base station controller is a service connect complete message received from the mobile station and the message that is provided between the mobile station and the base station controller is a mobile station's state response message that is provided in response to the state request message of the base station controller.

5. (Original) The dormant control system according to claim 1, wherein said specific message is a separate notice message concerning dormant function support through which the mobile station indicates whether the mobile station supports the dormant function or not.

6. (Currently Amended) The dormant control system according to claim 1, wherein the base station controller comprises:

a call control processor (CCP) that transmits information related to dormant control and service option information of the mobile station if the [[a]] mobile origination message is received from the mobile station through the base station transceiver subsystem; and

a selection and distribution unit (SDU) that reviews the service option information and dormant timer information received from the CCP, and if the packet data service option is indicated in the received information;

prepares for determination of whether the mobile station supports the dormant

function,

generates a service connection message and transmits the service connection message to the mobile station,

upon receiving the specific message from the mobile station and confirming the information on whether the dormant function is supported, drives the dormant timer, and

upon determining whether the mobile station supports the dormant function by confirming the driving of the dormant timer in the active/connected state, conducts the dormant function.

7. (Currently Amended) A dormant control method in a packet data service network comprising:

receiving ~~transmitting~~ information on whether a mobile station supports a dormant function in the packet data service network based on ~~using~~ a certain message different from a mobile origination message transmitted between the mobile station and a base station controller; and

upon receiving the certain message, confirming whether the mobile station supports the dormant function and then providing the dormant function, wherein said confirming includes:

determining whether to conduct the dormant function based on service option

information of the mobile station, a state of a dormant timer, and dormant control information included in the certain message received from the mobile station.

8. (Original) The dormant control method according to claim 7, wherein the certain message is a message that is used between the mobile station and the base station controller or a message that is provided between the mobile station and the base station controller.

9. (Original) The dormant control method in the packet data service network according to claim 8, wherein the certain message indicates in the reserved field of the message whether the relevant mobile station supports the dormant function or not.

10. (Original) The dormant control method in the packet data service network according to claim 8, wherein the message used between the mobile station and base station controller is a service connect complete message received from the mobile station and the message provided between the mobile station and base station controller is a state response message of the mobile station sent in response to a state request message of the base station controller.

11. (Original) The dormant control method according to claim 10, wherein said

service connect complete message comprises fields for message type, acknowledgement sequence number, message sequence number, acknowledgement required indicator, message encryption indicator, dormant support information, service connection sequence number and a reserved field.

12. (Original) The dormant control method according to claim 7, wherein the certain message is a separate dormant support notice message that the mobile station uses to indicate whether the mobile station itself supports the dormant function or not.

13. (Original) The dormant control method according to claim 12, wherein said dormant support notice message comprises fields for information on whether the dormant function is supported and service connection sequence number.

14. (Currently Amended) The dormant control method according to claim 7, wherein said provision of the dormant function comprises:

analyzing at the base station controller dormant support information within the certain message received from the mobile station;

if it is determined that the mobile station supports the dormant function, driving at the base station controller the ~~the~~ ^{[[a]]} dormant timer;

requesting at the base station controller for interface registration in order to transmit signaling information to a PDSN, receiving a response thereto and then notifying the mobile switching center of completion of the resource assignment;

establishing a PPP connection between the mobile station and the PDSN and conducting a mobile IP registration procedure, thereby transmitting and receiving packet data in an active/connected state; and

determining at the base station controller whether the dormant timer is in operation and if there has been no packet data transmission within the specified time of the dormant timer, making transition to the dormant state from the active/connected state.

15. (Original) The dormant control method according to claim 14, wherein said provision of the dormant function further comprises, if it is determined that the mobile station does not support the dormant function, refraining at the base station controller from driving the dormant timer, thereby maintaining the active/connected state.

16. (Currently Amended) A dormant control method in ~~a~~ the packet data service network, comprising:

transmitting a service connect complete message including information on whether the mobile station supports the dormant function or not in the packet data service

network; and

upon receiving the service connect complete message at the base station controller and analyzing whether the mobile station supports the dormant function, driving a dormant timer, and when packet data is transmitted and received in the active/connected state, determining whether the dormant timer is in operation and providing the dormant function, wherein said transmission of a service connect complete message comprises:

if the base station controller receives a mobile origination message from the mobile station, sending a service request to a mobile switching center and then upon receiving a resource assignment request, requesting a base station transceiver subsystem to assign resources, and thus assigning resources;

upon reviewing service option information of the mobile station received at the base station controller through the base station transceiver subsystem and dormant timer information, if a packet data service option is indicated, preparing for determination on whether the mobile station supports the dormant function;

transmitting at the base station controller an expanded channel assignment message to the mobile station through the base station transceiver subsystem and then transmitting a service connection message to the mobile station; and

generating at the mobile station the service connect complete message, adding the dormant support information thereto and transmitting it to the base station controller.

17. (Canceled)

18. (Currently Amended) A The dormant control method according to claim 16 in a packet data service network, comprising:

transmitting a service connect complete message including information on whether the mobile station supports the dormant function or not in the packet data service network; and

upon receiving the service connect complete message at the base station controller and analyzing whether the mobile station supports the dormant function, driving a dormant timer, and when packet data is transmitted and received in the active/connected state, determining whether the dormant timer is in operation and providing the dormant function,
wherein said provision of the dormant function comprises:

analyzing at the base station controller the dormant support information included in the service connect complete message received from the mobile station;

if it is determined that the mobile station supports the dormant function, driving the dormant timer at the base station controller;

sending at the base station controller an interface registration request to a PDSN for transmission of signaling information and then receiving a response thereto and notifying the mobile switching center of the resource assignment completion;

establishing a PPP connection between the mobile station and the PDSN and conducting a mobile IP registration procedure, thus transmitting and receiving packet data in a active/connected state; and

determining at the base station controller whether the dormant timer is in operation and if no packet data has been transmitted within the specified value of the dormant timer, making a transition from the active/connected state to the dormant state.

19. (Original) The dormant control method in the packet data service network according to claim 18, wherein said provision of the dormant function further comprises, if it is determined that the mobile station does not support the dormant function, refraining at the base station controller from driving the dormant timer, thus maintaining the active/connected state.

20. (Currently Amended) A method for managing call processing in a packet data service network, comprising:

receiving a message from a mobile station, said message received after receipt of a mobile origination message and including information indicating whether the mobile station supports a dormant function;

determining whether to conduct the dormant function based on service option information of the mobile station, a state of a dormant timer, and dormant control information

included in the specific message received from the mobile station; and

providing the dormant function based on the information in said message.

21. (Original) The method according to claim 20, wherein the dormant function is provided without determining a protocol standard of the mobile station.

22. (Currently Amended) The method according to claim 20, further comprising:
receiving the service option information from the mobile station; and
determining whether the mobile station supports the dormant function if the service option information indicates a predetermined type of service.

23. (Original) The method according to claim 22, wherein the predetermined type of service is a packet data service.

24. (Original) The method according to claim 23, further comprising:
accessing the information in said message indicating whether the mobile station supports the dormant function in response to the determining step.

25. (Original) The method according to claim 20, wherein said message is a pre-

existing message transmitted in the network, and the information indicating whether the mobile station supports the dormant function is included in a predetermined field of the pre-existing message.

26. (Original) The method according to claim 26, wherein the field is an unused field or a reserved field of pre-existing message.

27. (Original) The method according to claim 26, wherein said message is a service connect complete message.

28. (Original) The method according to claim 26, wherein said message is a state response message issued in response to a state request message issued from a base station controller

29. (Original) The method of claim 20, wherein said message is a special message created to indicate whether the mobile station supports the dormant function.